US010000806B2

(12) **United States Patent**
Kaiser et al.

(10) **Patent No.: US 10,000,806 B2**
(45) **Date of Patent: Jun. 19, 2018**

(54) **TRIPLEX EVENT-SPECIFIC REACTION USED TO QUANTIFY SPECIFIC EVENTS AND POSSIBLE CONTAMINATING EVENTS**

(71) Applicant: **Dow AgroSciences LLC**, Indianapolis, IN (US)

(72) Inventors: **Tina Marie Kaiser**, Carmel, IN (US); **Stephen Novak**, Westfield, IN (US)

(73) Assignee: **Dow AgroSciences LLC**, Indianapolis, IN (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 452 days.

(21) Appl. No.: **14/720,511**

(22) Filed: **May 22, 2015**

(65) **Prior Publication Data**

US 2015/0344949 A1 Dec. 3, 2015

Related U.S. Application Data

(60) Provisional application No. 62/003,878, filed on May 28, 2014.

(51) **Int. Cl.**
C12Q 1/68 (2018.01)

(52) **U.S. Cl.**
CPC ***C12Q 1/6876*** (2013.01); ***C12Q 1/686*** (2013.01); ***C12Q 1/6813*** (2013.01); *C12Q 2600/13* (2013.01); *C12Q 2600/16* (2013.01)

(58) **Field of Classification Search**
USPC 435/6.12, 91.2
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2007/0117106	A1*	5/2007	Remacle	C12Q 1/6895 435/6.12
2007/0148648	A1	6/2007	Dugas et al.	
2012/0222153	A1	8/2012	Cui et al.	
2012/0244533	A1	9/2012	Zhou et al.	
2013/0095485	A1*	4/2013	Channabasavaradhya	C12Q 1/6895 435/6.11
2013/0095486	A1*	4/2013	Channabasavaradhya	C12Q 1/6895 435/6.11

* cited by examiner

Primary Examiner — Kenneth R Horlick
(74) *Attorney, Agent, or Firm* — Michael R. Asam; Magleby Cataxinos & Greenwood

(57) **ABSTRACT**

Disclosed herein are methods for determining if a contaminating integration of a nucleotide sequence is present in a set of nucleic acids. Further disclosed herein are methods for determining the copy number/zygosity of a nucleic acid sequence of interest. The methods disclosed herein may be performed using quantitative PCR.

15 Claims, 7 Drawing Sheets